

REMARKS

Claims 1-25 were pending in the present application. By the amendment submitted herewith, claims 4 and 24 are amended to particularly point out and distinctly claim certain embodiments encompassed by the invention. Support for the present amendments may be found in the application as originally filed, for example, in the published application including the claims, and in the specification at page 3, lines 21-25; at page 4, line 31 through page 5, line 2; at page 6, lines 1-18, and elsewhere. No new matter is introduced by way of the present amendment.

OBJECTION TO THE SPECIFICATION

The PTO objects to the specification under M.P.E.P. §608.01(b), asserting that the Abstract impermissibly exceeds 150 words.

Applicants traverse this objection and submit that it has been rendered moot by the amendment submitted herewith, according to which the Abstract has been revised such that it does not exceed 150 words. The specification is therefore in compliance with M.P.E.P. §608.01(b), such that withdrawal of the objection is respectfully requested.

REJECTIONS UNDER 35 U.S.C. §102

The PTO rejects claim 24 under 35 U.S.C. §102 for alleged lack of novelty over Bachman (U.S. Patent No. 4,241,942). The Examiner asserts in particular that Bachman discloses both a secure contest card and a mask for masking a visual stimulus comprising an image having a plurality of lines.

Applicants respectfully traverse these grounds of rejection. The present embodiments are directed in pertinent part to a system for assessing cognitive impairment of a user, comprising presentation means; mask means; response measuring means; processing means; and assessment means as recited, wherein the mask comprises an image having a plurality of filled circles or curved lines or parts thereof.

Applicants traverse the assertion found in the Action, that Bachman “further discloses a mask for masking a visual stimulus comprising an image having a plurality of curved

lines” with references to Figure 6 and Column 2, lines 10-27 of Bachman, which merely describe a patterned layer that is different from the presently recited mask. Contrary to the Examiner’s assertion, applicants therefore submit that the patterned layer of Bachman is not a “mask” for masking a visual stimulus. Instead, Bachman teaches in the referenced passage that, “[t]he patterned layer should not interfere with or inhibit the transmission of light rays from the indicia to the retinal screen of the eye and an observer must be capable of easily reading the indicia once the [elastomeric] mask is removed” (emphasis added). Thus the patterned layer clearly does not function as a “mask” according to the teachings of what is a mask in the context of the instant application (e.g., instant specification at page 3, lines 4-8).

In addition, by the present amendment claim 24 depends from claim 22, which recites a system for assessing cognitive impairment of a user. Applicants respectfully submit that Bachman fails to disclose or suggest a system having all features of the presently recited system. It is well established that in order to anticipate a claim, the reference relied upon by the PTO must teach each and every element of the claim. Bachman, however, fails to teach, whether expressly or implicitly, all of the recited features of claim 22. Applicants therefore submit that claim 24 is necessarily novel by way of its dependency on a novel base claim (claim 22), rendering moot the PTO’s rejection under 35 U.S.C. § 102 moot. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

REJECTIONS UNDER 35 U.S.C. §103

A. The PTO rejects claims 1-6, 9, 10, 12-16, 18-23, and 25 for alleged non-obviousness over Polat *et al.* (U.S. Patent No. 6,876,758 B1) in view of de Lemos (U.S. Application No. 2007/0265507 A1). The Examiner concedes that Polat *et al.* fail to disclose such claim features as masking a stimulus, repeating the stimulus for a range of durations, presenting a focal point to the user before presenting the stimulus, calculating both an error rate for each stimulus and an error rate curve for the user, uniform time intervals between repetitive exposures, and a mask comprising at least one filled circle. The Examiner asserts, however, that de Lemos remedies these deficiencies of Polat *et al.*, citing in particular paragraphs 0035, 0051, 0053, 0057, 0067, and 0068 of de Lemos. The Examiner further asserts that it would have been

obvious to modify the method of Polat *et al.* according to the disclosure in de Lemos, alleging, for example, that using a mask provides a means of controlling the stimulus to the user, allowing for accurate measurement of a response time; and also alleging that displaying each stimulus an equal number of times provides a means of acquiring an accurate diagnosis of a user impairment.

Applicants traverse these grounds of rejection. As a first matter, it is respectfully noted that the earliest priority date of de Lemos as relied upon by the PTO is 13 March 2006, and that de Lemos was not published until 15 November 2007. Both of these dates are well after the priority date (January 7, 2003) and the complete application filing date (January 7, 2004, the international filing date of the PCT application on which the present U.S. national phase application is based) of the instant application. Applicants therefore respectfully submit that the PTO errs, insofar as de Lemos cannot be properly cited against the instant application. It is therefore submitted further that any obviousness rejections based on de Lemos are rendered moot, where this reference is inapposite and should therefore be removed.

It follows that any asserted rejections for obviousness of claims 1-6, 9, 10, 12-16, 18-23 and 25 must be based solely on Polat *et al.* Polat *et al.* relates to a system for improving a user's visual perception, which system is deployed for use over a communications network. As conceded by the PTO, Polat *et al.* fail to disclose masking a test stimulus, while applicants respectfully wish to point out that such masking of a test stimulus comprises a recited feature of the presently claimed embodiments. Therefore, it is respectfully submitted that Polat *et al.* fail to teach or in any way suggest the subject matter encompassed by the instant independent claims 1, 18, 20 and 22.

Furthermore, Polat *et al.* fail to disclose or in any way suggest the presently recited features of (i) presenting a focal point to the user before presenting the stimulus (claims 3, 19, 21, 23); (ii) calculating for each stimulus duration an error rate (claims 4, 6, 18, 20); (iii) an error rate curve for the user (claim 5, 6); (iv) repetitions of the stimulus exposure being separated by a uniform time interval (claim 9); and (v) a mask comprising at least one filled circle (claim 15). Applicants further note that Polat *et al.* also fail to disclose or suggest (vi) repeating the stimulus for a range of predetermined durations (claim 2, 22); (vii) presenting each of the test stimuli an equal number of times (claim 14); (viii) generating a reference profile using

data previously generated by the user (claim 10); (ix) a mask comprising a plurality of full circles or parts thereof (claim 16); and (x) a user profile being a response curve (claim 25). It is therefore submitted that at the time of filing the present application, the person having ordinary skill in the art could not reasonably have expected successfully to arrive at the subject matter of the instant claims given the disclosure of Polat *et al.*

Applicants submit further that even assuming, *arguendo*, that Bachman (cited *supra* under §102) were to be cited by the PTO under §103 as the only reference cited by the PTO that in any way mentions the concept of a mask, the presently claimed subject matter is still patentably nonobvious. Bachman discloses a secure contest card with a mask having an opaque rubber (elastomeric) compound on the surface which conceals visual indicia on the card. Bachman also discloses a patterned layer on the contest card, the purpose of which is to render the visual indicia not susceptible to compromise by photocopy machines and other sophisticated techniques. It is noted that the field of invention disclosed in Bachman is in the area of lotteries, games and contests, and that Bachman does not disclose or in any way suggest applying the subject matter disclosed therein to the field of cognitive testing or assessment. Accordingly, applicants respectfully submit that the field of invention in Bachman is so clearly distinct from the instant invention that a person skilled in the art of assessing cognitive impairment would not identify the Bachman citation as being of any relevance.

Notwithstanding its lack of relevance in the art to which the present application pertains, Bachman further fails to render the presently claimed subject matter obvious for other reasons. For instance, the indicia on the card in Bachman must remain visible to the end user after removal of the elastomeric mask covering the indicia. Once removed, the elastomeric layer is destroyed, thereby obviating the possibility of repositioning the elastomeric mask over the indicia after its removal therefrom (Bachman, column 2, lines 57-60). Applicants note that this finality in irreversibly removing the elastomeric mask according to Bachman clearly teaches away from the repetition step in subparts (d) of the present claims. Additionally, and for reasons also given above, the patterned layer of Bachman is not a mask for masking a visual stimulus according to the present disclosure, but instead functions in a wholly different manner, where

Bachman teaches that this patterned layer should not interfere with light ray transmission from the indicia to the retina.

According to Bachman, a patterned layer is interposed between the card stock and the indicia, or between the indicia and elastomeric mask, or both between the card stock and the indicia and between the indicia and the elastomeric mask. The objective of the patterned layer disclosed by Bachman is to prevent recognition of the indicia, e.g., when using a photocopier, by rendering light rays which may be transmitted from the indicia to the paper of the photocopy process indistinguishable from the light rays transmitted from the patterned layer to the paper, so that the image which appears on the paper of the photocopy process does not disclose the hidden indicia (Bachman, column 2, lines 21-27). Thus, according to these teachings of Bachman, the patterned layer is “invisible to visual examination” (see column 5, lines 43-46). The skilled person would therefore recognize that the function of the patterned layer according to Bachman is clearly different from the function of the masking step/mask in the present embodiments, which is expressly to preclude visibility of a visual test stimulus to a user. Applicants thus wish to point out that according to the instant application, in order for the masking step to achieve the intended effect, the mask itself must be visible, unlike the patterned layer disclosed in Bachman, which as just noted, is invisible to visual examination. In addition, the presently claimed subject matter relates to presenting a visual test stimulus to a user, and then masking the stimulus, a sequence of steps that is repeated. Bachman fails to disclose or contemplate such repetition.

In view of the foregoing, it is therefore submitted that the disclosure of Bachman is not relevant prior art and that, in any event, Bachman teaches away from the present subject matter. Applicants therefore respectfully submit that the PTO improperly relies on de Lemos for reasons given above, that the instant claims satisfy the requirements of 35 U.S.C. §103 over Polat *et al.* and that, for reasons given herein, the presently encompassed subject matter is nonobvious even further in view of Bachman. The PTO thus has failed to establish a case of *prima facie* obviousness such that the rejections should be withdrawn.

B. The PTO rejects claims 7, 8, and 11 for alleged non-obviousness over Polat *et al.* and de Lemos as above, in view of Rootzen *et al.* (U.S. Patent No. 5,381,195). The

Examiner concedes that Polat *et al.* and de Lemos fail to disclose calculating both a mean response time and a stimulus exposure duration between 10ms and 300ms, but asserts that Rootzen *et al.* teach both of these claim features. The Examiner further asserts that it would have been obvious to combine the cited references since such a combination would provide a means of accurately determining the attention of the user, thereby determining whether the user is impaired.

Applicants traverse these grounds of rejection. The teachings of Polat *et al.* are discussed above, and for reasons also discussed above, de Lemos is not available to the PTO as a reference and therefore need not be distinguished. In particular, and for reasons given above, the subject matter of claim 1, from which the instant claims 7, 8 and 11 depend directly or indirectly, is neither taught nor suggested by Polat *et al.* Furthermore, the disclosure of Rootzen *et al.* fails to remedy the deficiencies of Polat *et al.*.

Rootzen *et al.* are merely concerned with a method of determining a response time window for each participant, based on the participant's own data or on estimates from a population mean (Rootzen *et al.*, column 6 lines 21-41), where the response time (RT) window specifies upper (RT_{max}) and lower (RT_{min}) limits of the time in which a participant is expected to make a legitimate judgment about whether or not a visual stimulus was seen. The initial response time window for a participant is adjusted over the course of the test according to the pattern of false positive responses (*i.e.*, errors of detection). The critical performance measure according to Rootzen *et al.* is the final response time window, which is represented by two individual response times, the upper limit of the response time window (RT_{max}) and the lower limit of the response time window (RT_{min}).

By contrast, according to the instant application, the relevant response time data are the participant's actual response times to each test stimulus presented at each of the predetermined test stimulus exposure durations. The response time performance measures are the means of the response times in response to the test stimuli presented at each of the predetermined test stimulus exposure durations. The mean response time at each test stimulus exposure is then used to plot a curve that charts the mean response time relative to the pre-

determined test stimulus exposure durations; this curve provides a participant's performance profile. This performance profile is neither taught nor suggested by Rootzen *et al.*

Accordingly and in view of the foregoing, applicants submit that the features of claims 7 and 8 are neither taught nor suggested by the disclosure of Rootzen *et al.*, whether taken alone or in combination with any other prior art reference(s). In any event, moreover, applicants respectfully submit that the subject matter of claims 7, 8 and 11 is patentably nonobvious by reason of the dependency of these claims on independent claim 1, which for reasons given herein, the applicants submit is patentable and in full compliance with the requirements of 35 U.S.C. §§ 102 and 103. Reconsideration and withdrawal of the rejections in view of the present remarks are therefore respectfully requested.

C. The PTO rejects claim 17 for alleged non-obviousness over Polat *et al.* and de Lemos as above, in view of Bachman. In particular, the Examiner asserts that it would have been obvious to modify the combination of Polat *et al.* and de Lemos to include a mask having a plurality of lines, as allegedly disclosed in Bachman, since it was allegedly well known in the art to utilize various types of masks during a visual test.

Applicants respectfully traverse these grounds of rejection. For reasons given above, de Lemos is not citable against the instant application. The PTO must therefore base its obviousness rejections on Polat *et al.* in view of Bachman. As discussed above, however, applicants respectfully submit that Bachman is non-analogous art from a distinct field having no relevance to the subject matter of the instant application. Moreover, and for reasons also given above, Bachman teaches away from the presently claimed subject matter. Briefly (please refer to discussion above), the elastomeric layer of Bachman fails even remotely to contemplate the presently recited step of repeating because once removed, this layer cannot be replaced. Also, because the patterned layer of Bachman should not, according to Bachman, interfere with light ray transmission from the indicia to the retina, this patterned layer of Bachman clearly does not function as a mask according to the step of masking in the instant claims, and so cannot render the subject matter of claim 17 obvious. Applicants therefore submit that for these reasons claim

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17 is patentable, and that in any event the subject matter of claim 17 satisfies the requirements for patentability given the dependency of this claim on a patentable independent claim.

Applicants respectfully submit that in view of the present Amendment and the accompanying Remarks, all of the PTO's grounds for rejection have been addressed in full, and that they are now moot. Should there remain any issues outstanding in the present application, the Examiner is urged please to contact applicants' undersigned representative at the earliest convenience.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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